Message

From: d'Almeida, Carolyn K. [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=9EC4401AFA1846DD93D52A0DDA973581-CDALMEID]
Sent: 5/2/2017 4:01:57 PM
To: Dan Pope [DPope@css-inc.com]; Cosler, Doug [DCosler@TechLawInc.com]; Wayne Miller [Miller.Wayne@azdeq.gov]; Steve Willis [steve@uxopro.com]; Bo Stewart [Bo@Praxis-Enviro.com]; Jennings, Eleanor [Eleanor.Jennings@parsons.com]; Brasaemle, Karla [KBrasaemle@TechLawInc.com]; Davis, Eva [Davis.Eva@epa.gov]
Subject: FW: Implementation of EBR at former WAFB

fyi

From: Henning, Loren
Sent: Monday, May 1, 2017 12:36 PM
To: d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>; Davis, Eva <Davis.Eva@epa.gov>
Subject: FW: Implementation of EBR at former WAFB

This is what I sent to Phil. Angeles reviewed the earlier version and thought it was too long and had too much detail, so I shortened it to the essentials. I've only received a note from Phil that he received this email and that they are working on a response.

Loren

From: Henning, Loren
Sent: Monday, April 24, 2017 5:07 PM
To: philip.mook@us.af.mil
Cc: Herrera, Angeles <Herrera.Angeles@epa.gov>; 'Tina LePage' <LePage.Tina@azdeq.gov>
Subject: Implementation of EBR at former WAFB

Hi Phil,

As we discussed, here is a fairly general overview of the phased implementation of EBR requested by the Regulatory Agencies. The Agencies understand the AF's desire to move forward with implementation of EBR; however, our technical staff still have significant concerns about how EBR will be implemented and evaluated as a viable treatment technology. Therefore, the Agencies request that EBR be implemented in a phased approach, using a re-circulation approach similar to that outlined in the approved May 2014 RD/RA work plan. It is necessary to use a recirculation approach because that approach was used in the modeling to predict the remedial time frame. The phased implementation must allow the Agencies to verify that benzene (including benzene in the LNAPL phase) is being degraded/depleted, to verify effective TEA distribution throughout the treatment area, and to determine the optimal conditions for EBR.

For this phased approach, the AF, with input provided by the Agencies, would select two locations at the site in each of the hydrogeologic zones to implement EBR initially; one location would be in an area of high LNAPL concentration, and another area with dissolved phase contaminants only. We propose that the primary measure of effectiveness of EBR would be reduction of benzene concentrations in LNAPL and groundwater, after allowing for the potential increase in dissolved phase concentrations immediately after the TEA is injected. Other lines of evidence to demonstrate that EBR is working as expected would include geochemical and microbiological analyses to determine the response of site geochemistry and the microbiota (particularly those microorganism groups known to be involved in degradation of benzene under sulfate-reducing conditions)

to sulfate injection. This empirical data collected before and during implementation of EBR would be used to evaluate its efficacy, would be the basis for optimizing the system as appropriate, and would provide data on benzene degradation rates to be incorporated into appropriate models to predict the time to remediation.

Please share this with your technical staff, and let's plan to discuss in more detail during the next WAFB conference call.

Regards,

Loren

Loren Henning, Chief
Federal Facilities and AZ Private Sites Section
US EPA Region 9
(415) 972-3164 phone
(415) 699-1941 cell